

NORTH DAKOTA SUMMARY OF FY 2022 UIC CLASS VI WORK EVENTS

The North Dakota Industrial Commission, Department of Mineral Resources, Oil and Gas Division (Division) continues to operate the Class VI UIC Program without a significant non-compliance. As of September 30, 2022, North Dakota has three carbon dioxide storage facilities and one Class VI injection well. An inventory of these facilities can be found in Appendix A.

The 2009 legislature enacted legislation granting the Industrial Commission authority to regulate carbon dioxide sequestration. Proposed rules were published in September 2009 for a public hearing on October 15, 2009. The effective date was April 1, 2010. The EPA issued federal rules for Class VI wells for carbon dioxide sequestration on December 10, 2010. The Department of Mineral Resources hired a Carbon Capture and Storage Supervisor in July 2011 to administer North Dakota's Class VI program. Pursuant to the promulgation of the EPA Class VI rules, the Division decided to amend its rules to meet federal stringency requirements and a public hearing was held on April 24, 2012. These rules did not become effective and on a recommendation from the Attorney General's office, we again amended the rules and another public hearing was held on October 22, 2012. The rules became effective April 1, 2013, and the Division submitted a primacy application to EPA Headquarters and EPA Region VIII on June 21, 2013. The EPA Administrator signed the primacy agreement on May 8, 2017, and the approval was subject to a 60-day comment period which closed on July 18, 2017. The EPA granted primacy to North Dakota for the Class VI program effective April 24, 2018. Stephen Fried was the Carbon Capture and Storage Supervisor between October 1, 2021, and September 30, 2022.

Division staff has continued frequent meetings with prospective operators of both private and commercial carbon dioxide sequestration projects to provide guidance on compiling a carbon dioxide storage facility permit. A storage facility permit includes delineation and characterization of the storage reservoir and must be obtained before Class VI well permits will be issued to inject carbon dioxide.

A storage facility permit was issued on October 19, 2021, to Red Trail Energy, LLC for the Red Trail Richardton Ethanol Broom Creek Storage Facility #1 near Richardton for an ethanol plant and the first-in-the-nation state-primacy approved Class VI well began injection on June 17, 2022. Red Trail anticipates it will inject 180,000 metric tons annually. A storage facility permit was issued on January 21, 2022, to Minnkota Power Cooperative, Inc. for the Minnkota Center MRYS Deadwood Storage Facility #1 near Center for its coal-fired power plant. Minnkota anticipates it will inject up to 1,170,000 metric tons annually although a Class VI well permit has not been issued. A storage facility permit was issued on January 21, 2022, to Minnkota Power Cooperative, Inc. for the Minnkota Center MRYS Broom Creek Storage Facility #1 near Center for its coal-fired power plant. Minnkota anticipates it will inject up to 4,300,000 metric tons annually although a Class VI well permit has not been issued. A public hearing was held on July 20, 2022 for Dakota Gasification Company to obtain a storage facility permit to store approximately 2,700,000 metric tons of carbon dioxide annually in the Broom Creek Formation from its Great Plains Synfuels Plant; this storage facility permit is expected to be issued in January 2023. One additional ethanol plant near Underwood has completed its site characterization and it is anticipated a carbon dioxide storage facility permit application will be filed in October 2022 for up to 200,000 metric tons annually. Another ethanol plant near Spirit Wood is investigating carbon dioxide storage for up to 200,000 metric tons annually. A commercial ethanol storage facility near Beulah is undergoing site characterization to store between 12,000,000 and 20,000,000 metric tons annually. One additional coal-fired power plant near Underwood is investigating carbon dioxide storage for up to 9,000,000 metric tons annually.

Target reservoirs remain the Inyan Kara, Broom Creek, and Deadwood Formations. The Inyan Kara Formation consists of channel sands; the Broom Creek Formation consists of eolian sand dunes with tight carbonate infill; and the Deadwood Formation sands are not a frequent drilling target. There is possible interest in the Interlake Formation and Red River Formation in the very eastern parts of the basin. These two formations are limestones and dolostones that are not mineral bearing in the potential areas of interest.

At the end of FY2022, North Dakota one Class VI carbon dioxide injection well, one carbon dioxide observation monitoring well, and ten wells drilled as stratigraphic tests but constructed to Class VI standards. The Division anticipates applications for at two storage facility permits and associated Class VI wells during 2023.

APPENDIX A
CLASS VI FACILITY INVENTORY

Operator	Facility Type	Facility ID	Facility Name	Status	Location
Minnkota Power Cooperative, Inc.	Storage Area Facility	90000330	Minnkota Center MRYS Broom Creek Storage Facility #1	Permitted	Center Oliver County
Minnkota Power Cooperative, Inc.	Storage Area Facility	90000332	Minnkota Center MRYS Deadwood Storage Facility #1	Permitted	Center Oliver County
Red Trail Energy LLC	Storage Area Facility	90000317	Red Trail Richardton Ethanol Broom Creek Storage Facility #1	Active	Richardton Stark County
Red Trail Energy LLC	Class VI Well	37229	RTE 10	Active	SESE 10-T139N-R92W Stark County